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** PARTMENT OF THE ARMY
02080.TD RPS OF ENGINEERS, TULSA DISTRICT
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JSH TULSA DISTRICT GUIDE SPECIFICATION
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SECTION 02080

REMOVAL AND DISPOSAL OF ASBESTOS MATERIALS

PART 1 GENERAL

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********** This guide specification shall be used when asbestos containing material (ACM) of any kind or amount including friable and non-friable asbestos, is to be removed prior to demolition or in addition/alteration work. The presence of ACM should be determined by a qualified inspector and included in a Asbestos Survey Report. The determination of the presence of ACM should not be left up to the removal Contractor.
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1.1 SCOPE AND APPLICATION (REF 29 CFR 1926.58 (A))

1.1.1 General

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********** This paragraph incorporates all general applicable federal, state and local regulations. It should be noted that the section covers only what requirements will clarify or are in addition to the requirements stated in the applicable regulations. Repetition or quoting of requirements already stated in other regulations should be avoided. The designer should be familiar with the applicable state specifications and regulations and should coordinate them with the requirements of this section. Since this section does not stand alone, the designer should be thoroughly familiar with 29 CFR 1926.58 in order to recognize how this section and the CFR dovetails but does not overlap. This section should be edited as necessary to exclude any inapplicable requirements or to add additional requirements as perscribed by the using agency. The following are examples of items which should be listed after the last sentence:
a. Pipe insulation
b. Equipment insulation
c. Spray applied materials including acoustical plaster and fireproofing material
d. Ceiling tiles
e. Transite panels

f. Tile, siding, or roofing materials

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This section includes the handling of materials containing asbestos which are encountered during removal and demolition operations and the incidental procedures and equipment required to protect workers and occupants of the building or area, or both, from contact with airborne asbestos fibers. The work also includes the disposal of the removed asbestos containing materials. All work shall be in accordance with 29 CFR 1926.58 and 40 CFR 61, Subpart A and M, and Oklahoma Statutes, Title 40, Section 451-457. The requirements specified herein are additional or supplemental only to the requirements contained in 29 CFR 1926.58 and 40 CFR 61, and Oklahoma Statutes, Title 40, Section 451-457. The Contractor shall also comply with other laws, ordinances, rules, and regulations of federal, state, regional, and local authorities regarding handling, storing, transporting, and disposing of asbestos waste materials. Where requirement of the various regulations or these specifications conflict, the most stringent shall govern. The asbestos work includes the demolition and removal of asbestos containing materials from the areas described below. Asbestos removal includes the following:

1.1.2 Work to be Performed

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********** **Describe the extent of removal noting type of asbestos material, locations of removal, and description of limits of removal. A precise description of conditions shall be provided in these specifications and sufficiently coordinated with the drawings to allow enough information to submit a firm fixed price bid either on a lump sum basis or unit price. If unit pricing is necessary due to unknown quantities, a subparagraph "Measurement and Payment" shall be included.**

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All asbestos on or around the items to be demolished shall be removed as directed regardless whether listed or described herein. Removal of asbestos containing materials not identified herein but discovered during demolition will be paid for by an equitable adjustment in the contract price. When additional suspect asbestos materials are found, the Contracting Officer shall be notified and removal shall not commence until the Contractor is directed to do so.

1.1.3 Exclusions

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********** **Non friable materials are classified as ACM and therefore must be removed as such but some materials may be excluded from the respirator, clothing, and air monitoring requirements of the CFR. Confirm this with the District Safety Office and the coordinate with the Asbestos survey Report for the presence of non friable materials.**

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Respiratory protection, protective clothing, and air sampling are not required for removal of [ ]. Employees used solely for this removal are not required to be certified for asbestos removal.]

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

CODE OF FEDERAL REGULATIONS (CFR)

29 CFR 1926.58	Asbestos, Tremolite, Anthophylite, and Actinolite
40 CFR 61	General Provisions Subpart A
40 CFR 61	National Emission Standard for Asbestos Subpart M
40 CFR 241	Guidelines for the Land Disposal of Solid Wastes
40 CFR 257	Criteria for Classification of Solid Waste Disposal Facilities and Practices

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI Z9.2	(1979) Fundamentals Governing the Design and Operation of Local Exhaust Systems

ENVIRONMENTAL PROTECTION AGENCY (EPA)

EPA 560/5-85-024	Guidance for Controlling Asbestos Containing Materials in Buildings

NATIONAL INSTITUTE OF OCCUPATIONAL SAFETY AND HEALTH (NIOSH)

Manual of Analytical Methods, 2nd Ed., Vol. 1. Physical and Chemical Analysis Method (P&CAM):

Method 239	Asbestos Fibers in Air
Method 7400	Fibers (Nl, 3rd Ed., Vol. 1)

OKLAHOMA STATE DEPARTMENT OF LABOR - ASBESTOS DIVISION:

..REFEND Title 40	Rules for Abatement of Friable Asbestos Materials (Section 451-457)

1.3. SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having and "FIO" designation are for information only. The following shall be submitted in accordance with Section 01300 SUBMITTAL DESCRIPTIONS:

SD-01 Data

Manufacturer's Data, GA

Submit manufacturers data for the following items prior to starting removal work:

a. Local exhaust equipment b. Vacuum equipment c. Respirators and filters d. Pressure differential monitor e. Encapsulants

Asbestos Plan, GA

Prior to beginning work, the Contractor and certified industrial hygienist shall meet with the Contracting Officer to discuss in detail the asbestos plan required by 40 CFR 61, Subpart M. The asbestos plan shall be submitted to the Oklahoma State Department of Labor, Asbestos Division, for their review and approval.

Testing Laboratory, GA

Testing Laboratory Submit the name, address, and telephone number of the testing laboratory selected to perform the monitoring, testing, and

reporting of airborne concentrations of asbestos fibers along with certification that persons counting the samples have been judged proficient by successful participation within the last year in the National Institute for Occupational Safety and Health (NIOSH) Proficiency Analytical Testing (PAT) Program.

Competent Person, FIO

Submit the name, address, and telephone number of the competent person and a certification that he is an industrial hygienist and is certified by the American Board of Industrial Hygiene. Include the certification number and date. Submit prior experience record of asbestos removal activities.

SD-13 Certificates

Manufacturer's Certificates of Compliance, FIO

Prior to starting removal work, submit manufacturer's certificate of compliance for the following items certifying that equipment conforms to the specification requirements:

a. Local exhaust and vacuum filters
b. Respirators

Contractor's Certifications and License, FIO

The Contractor shall submit certification and results of respirator fit tests for purifying air type respirators. The current certificate and state license for the Contractor and for each individual asbestos worker shall be provided to the Contracting Officer prior to going to work.

SD-18 Records

Monitoring Results, FIO

Submit monitoring results to the Contracting Officer within 3 working days, signed by the testing laboratory employee performing air monitoring, the employee that tested the sample, and the industrial hygienist. Fiber counting shall be complete and results reviewed by the industrial hygienist within 16 hours. The industrial hygienist shall notify the Contractor and the Contracting Officer immediately of any exposures to fibers in excess of the acceptable limits.

Landfill, FIO

Submit written evidence that the landfill for disposal is approved for asbestos disposal by the EPA and local regulatory agencies. Within 3 working days after delivery, submit detailed delivery tickets, prepared, signed, and dated by an agent of the landfill certifying the amount of asbestos materials delivered to the landfill.

Medical Examinations, FIO

Submit verification that all employees have received the specified medical examination prior to start of work.

Permits and Notifications, FIO

Obtain and submit necessary permits in conjunction with asbestos removal, hauling, and disposition, and provide notification of such actions at least 20 working days prior to starting work. The Contractor shall send written notification to the following:

NESHAPS Coordinator: State Health Dept., Tom Hudson, Air Quality Service, 1000 N.E. 10th, Box 53551, Oklahoma City OK., 73152, (405) 271-5220.

EPA: Region 6, NESHAP Coordinator, 1445 Ross Avenue, Dallas, Texas 75202, (214) 655-7223

Oklahoma State Department of Labor - Asbestos Division, 4001 N. Lincoln, Oklahoma City, Oklahoma 73105-5212, (405) 528-1500

The notification shall include, but not limited to the following information.

a. Name and address of Contractor.

b. Address and description of the building, including its size and age, amount (in square feet) of friable asbestos material present, and nature of the work.
c. Scheduled starting and completion dates for abatement.
d. Detailed procedures that will be employed to comply with the regulations.
e. The name and address of the waste disposal site where the asbestos waste will be deposited.

Recordings of pressure differential, FIO

Recordings of pressure differential between the contained and noncontained work area shall be submitted to the Contracting Officer within 24 hours from the end of each workday. The industrial hygienist shall notify the Contractor and the Contracting Officer immediately of any variance in the pressure differential which could cause exposure of adjacent unsealed areas to asbestos fiber concentrations in excess of the action level.

1.4 DEFINITIONS (REF 29 CFR 1926.58(B))

1.4.1 Asbestos Containing Material (ACM)

Material composed of asbestos of any type and in an amount greater than 1 percent by weight, either alone or mixed with other fibrous or nonfibrous materials.

1.4.2 Asbestos Control Area (Regulated Area)

Designated rooms, spaces, or areas of the project in which asbestos abatement actions are to be undertaken or which may become contaminated as a result of such abatement actions. A contained work area is a regulated work area which has been sealed, plasticized, and equipped with a decontamination enclosure system. A noncontained work area is a regulated work area which has not been plasticized or equipped with a decontamination enclosure system.

1.4.3 Area Monitoring

Sampling of asbestos fiber concentrations within the asbestos control area and outside the asbestos control area which is representative of the airborne concentrations of asbestos fibers which may reach the breathing zone.

1.4.4 Competent Person

The competent person shall be a certified industrial hygienist. The industrial hygienist shall be certified by the American Board of Industrial Hygiene and have prior experience in the health and safety aspects of an asbestos removal project. The Industrial Hygienist may be a Professional Engineer or Certified Safety Professional with minimum of 5 years experience in industrial hygiene. Prior experience shall include work on asbestos projects of a similar nature and scope. Similarities shall be in areas related to material composition, project size, number of employees and the engineering work practice and personal protection controls required.

1.4.5 Encapsulate

The process whereby an encapsulant is applied to ACM to control the release of asbestos fibers into the air.

1.4.6 Encapsulant

A liquid material which can be applied to ACM which controls the possible release of asbestos fibers from the material either by creating a membrane over the surface (bridging encapsulant) or by penetrating into the material and binding its components together (penetrating encapsulant).

1.4.7 Friable Asbestos Material

Material that contains more than 1 percent asbestos by weight which can be crumbled, pulverized, or reduced to powder by hand pressure when dry.

1.4.8 Nonfriable Asbestos Material

Material that contains asbestos in which the fibers have been locked in by a bonding agent, coating, binder, or other material so that the asbestos is well bound and may not release fibers in excess of the action level during any appropriate use, handling, storage, transportation, or processing. Nonfriable asbestos material may be considered hazardous during removal and disposal procedures.

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********** **Use the following par. for work in Oklahoma where the State PEL is lower than the CFR level of 0.2 fibers/cu. cm.**
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1.4.9 Permissible Exposure Limit (PEL) (Ref 29 CFR 1926.58 (c))

Asbestos fiber airborne concentration of "0.2" as stated in 29 CFR 1926.58 (c) shall be changed to "0.01".

1.5. EXPOSURE MONITORING (Ref 29 CFR 1926.58 (f))

1.5.1 Air Sampling and Monitoring (Area):

Testing shall be performed using NIOSH Method 7400 or Method 239. The minimum air volumes for the tests are 3000 liters for 37mm cassettes, and 1500 liters for 25mm cassettes. Air monitoring shall be conducted according to methods prescribed in EPA 560/5-85-024. Fiber counts shall be reported to 0.01 digit on the air sample record form. If at any time the results of the air samples taken outside the work area rise above 0.01 fibers/cubic centimeter, the work shall stop immediately and clean down procedures shall be performed. "Outside the work area" shall be defined as outside the contained or non-contained work area. For final air sampling, the area shall be dry, and an "aggressive sampling" method shall be employed. Procedures for aggressive sampling shall be as described in EPA 560/5-85-024. Analyze sample on filter via NIOSH Method 7400 or Method 239. "Clean" shall be defined as having an air concentration of 0.005 fibers/CC or the initial air sample concentration whichever is greater.

1.5.2 Air Monitoring (Personal)

Daily monitoring for employee exposure shall be such that all employees involved in asbestos removal and cleanup will be sampled during each work shift. Any changes is the procedure (i.e., amounts of asbestos removed, percentage of asbestos contained in the materials, etc,) shall require re-sampling.

1.5.3 Documentation

a. Documentation of air sampling
Include as a minimum: Calculations of minimum sample volume to achieve necessary detection limits; sampling times; sampling locations (with appropriate diagrams); evidence of periodic inspection of sampling equipment; documentation of pre and post calibration of equipment; detailed description of work conditions; description of worker protective devices; and a description of any atypical environmental conditions.
b. Documentation of sample analysis

Inlude as a minimum: Sample identification; total sample duration; sample flow rate; total air volume; total fibers counted (with work sheets); total fields counted; blank filter analysis; retitle field area; and fiber concentration in fibers per cubic centimeter. Analytical results shall include calculation of detection limits as given in Appendix M of EPA 560/5-85-024. Quantification limit shall be at least 0.005 fiber/CC for clearance and preliminary samples.

1.6 RESPIRATORY PROTECTION (REF 29 CFR 1926.58 (H))

Personnel engaged in the removal or demolition of pipes, structure, or equipment covered or insulated with asbestos, or engaged in the removal or demolition of asbestos insulation or covering, shall wear air purifying full face respirators at all times unless a greater degree of protection such as type C respirators are required, or as determined by initial and periodic employee exposure monitoring. Respirators shall be cleaned prior to use, and the filters shall be disposed of a least daily.

1.7 PROTECTIVE CLOTHING (REF 29 CFR 1926.58 (I))

1.7.1 General

Protective gloves shall be disposable plastic or rubber. Cloth gloves may be worn inside the protective gloves for comfort, but shall not be used alone. Use tape to secure sleeves at the wrists and to secure foot coverings at the ankles. Furnish the Contracting Officer with 2 complete sets of personal protective clothing (including respirators) at all times for entry into and inspection of the asbestos control area.

1.7.2 Work Clothing

Cloth work clothes shall be provided and shall be worn under the protective coveralls and foot coverings.

1.7.3 Eye Protection

Goggles shall be worn by personnel engaged in asbestos operations when the use of a full face respirator is not required.

1.8. COMMUNICATION OF HAZARDS TO EMPLOYEES (Training) (Ref 29 CFR 1926.58 (k))

The Contractor's onsite representative shall have experience in asbestos removal and shall have been to school, or seminars on asbestos removal such as "Supervision of Asbestos Contracts" by the Georgia Institute of Technology or "Workshop on Safe Removal of Asbestos from Buildings and Structures" by Extension Division. University of Missouri, Columbia, or an equally qualified course as recognized by the EPA and acceptable to the Contracting Officer. The Contractor shall be licensed by the State of Oklahoma and submit four copies of the Education Certificates for Asbestos Abatement Course Completion. In addition to the above training the onsite representative, the supervisor, and all asbestos workers shall have completed the State of Oklahoma asbestos removal training requirements.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 WORK METHODS AND PRACTICE

3.1.1 Work Methods

3.1.1.1 Major Asbestos Removal Operations (Ref 29 CFR 1926.58 (e) & (g))

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********** **Appendix F is described as Non-mandatory in the 1926.58 and the implimentation of App F to mandatory may be deleted if so desired.**
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Asbestos removal shall conform to the requirements set forth herein including Appendix F to 29 CFR 1926.58 and all recommended requirements in Appendix F shall be mandatory. Local exhaust systems shall be installed and operated in accordance with ANSI Z9.2. Provide manually recorded manometer readings of the pressure differential between the contained work area and adjacent unsealed areas at the beginning of each workday and every 2 working hours Calibrate the manometer daily as recommended by the manufacturer. Replace filters as required to maintain the efficiency of the system.

3.1.1.2 Small Scale Asbestos Removal Operations (Ref 29 CFR 1926.58 (e)(6)(iv))

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********** **It should be determined by the designer what asbestos removal work can be classified as Small Scale Short Duration Activities as defined in Appendix G of 1926.58 and this portion of work should be identifed below.**
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********** **Asbestos removal in [describe locations] may be considered to be small scale short duration asbestos renovation and maintenance activities as described in 29 CFR 1926.58 and the work practices and engineering controls within areas where asbestos is to be removed may conform to the requirements contained herein and as set forth in Appendix G to 29 CFR 1926.58..**

3.1.1.3 Personnel of Other Trades

Personnel of other trades not engaged in the removal and demolition of asbestos shall not be exposed at any time to airborne concentrations of asbestos in excess of 0.01 fibers unless the personnel protection provisions of this specification are complied with by the trade personnel.
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********** **Additional removal requirements and proceedures specifically required by the designer or using agency shall be included in this paragraph. For instance, describe special handling, required encapsulation on specific portions to be removed or to**

remain, cleanup of asbestos debris on soil in crawl spaces, etc.
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3.1.2 Work Practice (Ref 29 CFR 1926.58 (g))

Provide a roped off perimeter around noncontained work areas where the asbestos handling procedures are performed and maintain other requirements for asbestos control areas. The roped off perimeter shall be a minimum of 20 feet from asbestos removal operations. Also, where an enclosure is not provided, conduct personal and area monitoring or airborne fibers during the work shift at the designated limits downwind of the asbestos work area at such frequency as recommended by the industrial hygienist but not less than once every 4 hours. If the concentration of airborne asbestos fibers monitored at the designated limits at any time exceeds the lesser of two times the background or the action level, evacuate personnel in adjacent areas. If adjacent areas are contaminated, clean the contaminated areas, monitor, and visually inspect the area as specified herein.

3.2 CLEANUP AND DISPOSAL (REF 29 CFR 1926.58(L))

3.2.1 Cleanup

Maintain surfaces of the asbestos control area free of accumulations of asbestos fibers. Restrict the spread of dust and debris; keep waste from being distributed over the general area. Do not dry sweep or blow down the space with compressed air. Clean all surfaces in the work area and other contaminated areas with water and/or HEPA vacuum equipment. After cleaning the work area, allow 24 hours for settlement of dust and wet clean or clean with HEPA vacuum equipment all surfaces in the work area. When asbestos removal, disposal, and cleanup are complete, the industrial hygienist shall certify, in writing, that the concentration of airborne fibers in the asbestos control area is less than 0.01 fibers per cubic centimeter of air. Do not remove the asbestos control area enclosure or roped off perimeter and caution signs prior to the Contracting Officer's receipt of the industrial hygienist's certification. After final cleanup. remove filters on the building HVAC system and provide new filters. Dispose of filters as asbestos contaminated materials. The Contracting Officer will visually inspect the affected surfaces for residual asbestos material and accumulated dust. The Contractor shall reclean areas showing dust or residual asbestos materials. If recleaning is required. monitor the airborne fiber concentration after recleaning. Notify the Contracting Officer before unrestricted entry is permitted. The Government shall have the option to perform independent monitoring to certify the areas are safe before entry is permitted.

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Use the second set of parenthesis for projects at Ft. Sill. (Memo frm CESWT-PP-MA, Lutz, dated 19 Oct. 94 - "Utility Specs for Ft. Sill Projects")
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3.2.2 Disposal of Asbestos

Collect asbestos waste, scrap, debris, bags, containers, equipment, and asbestos contaminated clothing which may produce airborne concentrations of asbestos fibers; place in sealed impermeable bags imprinted with a caution label. Dispose of waste asbestos material [at an Environmental Protection Agency (EPA) permitted sanitary landfill off Government property] [in the asbestos pit at the Ft. Sill sanitary landfill]. For temporary storage, store sealed impermeable bags in asbestos waste drums. An area for interim

storage of asbestos waste containing drums will be assigned by the Contracting Officer or by an authorized representative. Procedure for hauling and disposal shall comply with 40 CFR 61, Subpart M, 40 CFR 241, and 40 CFR 257, and state, regional, and local standards. Sealed plastic bags may be dumped from drums into the burial site unless the bags have been broken or damaged. Damaged bags shall remain in the drum and the entire contaminated drum shall be buried. Uncontaminated drums may be recycled. Workers unloading the sealed drums shall wear appropriate respirators and personal protective equipment when handling asbestos materials at the disposal site.

--End of Section--